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09/973,608	10/09/2001	Masoud Azmoodeh		6171

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EXAMINER

LUU, AN T

ART UNIT

PAPER NUMBER

2816

DATE MAILED: 04/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/973,608

Applicant(s)

AZMOODEH, MASOUD

Examiner

An T. Luu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### DETAILED ACTION

Applicant's Amendment filed on 12-04-2002 has been received and entered in the case. The rejections set forth in the previous Office Action are withdrawn and a new ground of rejection is presented as indicated below.

#### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-9, 11-12 and 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by the Chow reference (U.S. Patent 4,733,197).

The Chow reference discloses in figure 2 an apparatus comprising high frequency clock/oscillator 15; a counter 27 coupled to the clock/oscillator; and a controller 51 coupled to the counter to change a duty cycle of the clock 12 to generate a low frequency clock 53 (fig. 5, graph 'a' and 'i') with an asymmetric duty cycle (fig. 5 and col. 3 lines 3-8 and 47-51) as required by claim 11.

As to claim 12, the frequency clock generated by oscillator 15 will have a frequency higher than the clock from counter 27 by a factor of K. Note col. 3, lines 25-29.

As to claim 15, figure 5 shows the controller changes the position of the falling edge of signal 53 relative to the position of the rising edge of signal 12.

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As to claim 16, the controller 51 changes duty cycle of the input (fig. 5, graph "a" and "i"). Therefore, it minimizes the n-th order harmonic and changes the magnitude of the other harmonic.

As to claims 1-5, they are rejected as being directed to the method or/and steps derived from the apparatus described in claims 11, 12, 15 and 16 noted above (i.e., steps each having a one-to-one correspondence to the corresponding elements of the apparatus). It is noted signals 12 and 53 have different duty cycle and the same frequency as shown in fig. 5; and that claim 5 reads on column 3, lines 31-35.

As to claims 6-9, the scopes of these claims are similar to those of claims 11 and 15-16. Therefore, they are rejected for the same reasons set forth above.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Chow reference (U.S. Patent 4,733,197).

Chow discloses all the claimed invention except for pointing out a particular environment in which the claimed invention can be applied. It would have been obvious to one skilled in the art to utilized Chow's invention wherein the output signal in his invention deems to be suitable - including, but not limited to, radio transceiver. A skilled artisan in the art would have found

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Chow's invention is suitable in fields of signal transmission since it has lower noise level and provides faster locking condition.

5. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Chow reference (U.S. Patent 4,733,197) in view of the Canfield et al. reference (U. S. Patent 6,310,922).

Chow discloses all the claimed invention except for teaching a counter is a down or programmable down counter as required by claims 13 and 14. However, Canfield discloses in figures 5 and 6 a programmable down counter for use in signal synchronization. It would have been obvious to one skilled in the art, at the time the invention was made, to replace a generic counter in Chow with a programmable down counter taught by Canfield because such a counter would provide further capability of adjusting the duty cycle of signal and/or fast synchronization. A skilled artisan would have been motivated to combine these arts to achieve a better range of duty cycle.

### *Response to Arguments*

6. Applicant's arguments filed 12-4-2002 have been fully considered but they are not persuasive.

Regarding to the rejection of claims 1, 6 and 11 under 35 USC 102, Applicant has argued that the cited prior art (*Chow*) does not disclose every limitations required by claims. Rejection has been revised to address all limitations of the rejected claims.

Applicant has argued that (1) Chow's inventive circuit is operationally different from that of the instant application and (2) Chow's circuit does not change the duty cycle of the clock to

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eliminate or suppress the nth-order harmonic of the clock and to generate a low frequency clock with an asymmetrical duty cycle. Examiner respectfully disagrees with Applicant's position for the following reasons:

(1) If the structure, recited in a claim, is met by prior art, by necessity, the functional limitations of the claim must also be met. A particular structure can provide more than one functional characteristics (i.e., duty cycle and n-th order harmonic) which in turn can be utilized for different purposes. If Applicant believes that there is different functionality between his invention and that of Chow, then there must be a corresponding structure (element) difference to provide said functionality that will distinguish the present invention over Chow. However, no such element has been recited in claim.

(2) Chow discloses every limitation recited in claim 11 including changing duty cycle of the clock and generating an asymmetric duty cycle. Claims 1 and 6 recite methods and/or steps derived from the circuit defined in claim 11. Therefore, claims 1 and 6 are rejected for being recited methods and/or steps of the rejected circuit. It is noted that "to eliminate or suppress the nth- order harmonic of the clock" is seen as a result of changing duty cycle of the signal. In fact, the relation of duty cycle and n-th order harmonic is derived from Fourier transform which provides information relationships between time domain and frequency domain.

Regarding the rejection of claims 10, 13 and 14, under 35 USC 103, Applicant has argued that a *prima facie* case of obviousness has not been established and there is no basis for combining arts to reject claims 13 and 14. Examiner respectfully disagrees with Applicant's assertion. Claim 10 defined an environment in which the circuit of the parent claim (claim 6) can

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be used. The Examiner has presented prior art, identified the differences and given rationale for the rejection of claim. Therefore, a *prima facie* case of obviousness has been clearly established.


As to claims 13 and 14, Examiner believes the rejection is legitimate and there is factual basis for the rejection. "Down counter" or "modulo counter" is not an inventive of the instant application. It is known as off-the-shelf component. Office Action provides a clear motivation to substitute a generic counter of Chow with "down counter" or "modulo counter".


### *Conclusion*

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to An T. Luu whose telephone number is 703-308-4922. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on 703-308-4876. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

An T. Luu   
April 10, 2003

  
TIMOTHY P. CALLAHAN  
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